

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A substrate processing apparatus comprising:

- a processing chamber for accommodating a substrate therein;
- a mounting table for mounting the substrate thereon;
- a heating member disposed in the mounting table, for heating the substrate;
- a sealing member disposed between a bottom of a support of the mounting table and a bottom portion of the processing chamber;
- a cooling unit, having a cooling medium, for cooling the sealing member by using a latent heat of vaporization of the cooling medium included therein, wherein the cooling unit includes an airtight casing for accommodating the cooling medium therein, the casing has a first end portion and a second end portion, and the first end portion is inserted into an opening formed through the bottom portion of the processing chamber, the first end portion being disposed below the sealing member, and the second end portion being disposed outside the processing chamber;
- a temperature sensor inserted into an aperture formed through the bottom portion of the processing chamber, near wherein the temperature sensor is disposed between the sealing member and the first end portion of the casing of the cooling unit; and
- a cooling unit controller for controlling the cooling unit flow rates of a coolant based on a measurement result of the temperature sensor,

wherein the cooling unit further includes a condenser accommodating therein the second end portion to thereby liquefy, in the second end portion, the cooling medium vaporized in the first end portion, the condenser includes a vessel for accommodating therein the second end portion, and a circulation line for circulating the coolant which liquefies the

vaporized cooling medium in the second end portion is connected to the vessel and a coolant supply source.

Claim 2 (Previously Presented): The apparatus of claim 1, wherein the casing is depressurized.

Claim 3 (Canceled).

Claim 4 (Original): The apparatus of claim 1, further comprising a processing gas supply system for supplying a processing gas into the processing chamber.

Claim 5 (Original): The apparatus of claim 4, wherein the processing gas supply system includes a plurality of processing gas supply units for supplying different processing gases and a processing gas supply unit controller for controlling each of the processing gas supply units such that the processing gases are supplied alternately.

Claim 6 (Withdrawn): A substrate processing apparatus comprising:
a processing chamber for accommodating a substrate therein;
a mounting table having a mounting portion for mounting thereon the substrate and a support for supporting the mounting portion;
a heating member disposed in the mounting portion, for heating the substrate;
a sealing member disposed between the support and the processing chamber; and
a shielding member for shielding a heat radiation directed toward the sealing member from the mounting portion; and
a shielding cap covering a bottom portion of the support.

Claim 7 (Withdrawn): The apparatus of claim 6, wherein the shielding member covers at least a part of a bottom surface of the mounting portion.

Claim 8 (Withdrawn): The apparatus of claim 6, further comprising a substrate elevating member for elevating the substrate, wherein the shielding member supports the substrate elevating member.

Claim 9 (Withdrawn): The apparatus of claim 6, further comprising a processing gas supply system for supplying a processing gas into the processing chamber.

Claim 10 (Withdrawn): The apparatus of claim 9, wherein the processing gas supply system includes a plurality of processing gas supply units for supplying different processing gases and a processing gas supply unit controller for controlling each of the processing gas supply units such that the processing gases are supplied alternately.

Claim 11 (Canceled).

Claim 12 (Previously Presented): The apparatus of claim 1, wherein the cooling medium is water, hydrofluoroether, alcohol, fluorine-contained inactive liquid or naphthalene.

Claim 13 (Currently Amended): The apparatus of claim 1, wherein the casing includes a wick for moving the first cooling medium liquefied in the second end portion to the first end portion by a capillary force.